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REVIEW ARTICLE

Training Residents in the Use of Telepsychiatry: Review of the Literature and a Proposed Elective

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Abstract Many regions in the United States are deficient in mental health services, especially those in rural areas. As a result of these deficiencies, many patients in need of psychiatric services are often left untreated. Although it is clear that telepsychiatry has great potential in improving patient access to mental health care in areas where psychiatric services are deficient, the lack of familiarity with the technology and inadequate training are current barriers to expanding the use of telepsychiatry. A review of telepsychiatry, its clinical applications, and evidence-based literature regarding competencies in graduate medical education related to telepsychiatry are provided. An approach to implementing telepsychiatry into a curriculum is suggested. We also propose an elective clinical experience with resources for didactics or independent study that will enable residents to develop a knowledge base and competence in the practice of telepsychiatry.

Keywords Telepsychiatry · Telehealth · Telemedicine · Accreditation Council for Graduate Medical Education (ACGME) · Health information technology (HIT) · Videoconferencing

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Introduction

Mental disorders are common. An estimated 26.2 % of Americans ages 18 and older (about 1 in 4) have a mental disorder in any one-year. However, the main burden of illness is concentrated in about 6 % who suffer from a serious mental illness [1]. Mental disorders are not only common, they are also associated with high levels of distress, disability, morbidity, and mortality. However, many states have scarcity of health and human services, especially in rural areas. Such disparities are particularly apparent in the area of mental health services [2]. Because of the scarcity of resources in rural areas, and areas of lower population density, many people with mental disorders do not have access to mental health services. This lack of access often forcees patients to travel long distances to obtain mental health services, or forgo such services altogether. Telepsychiatry is a demonstrated solution to address the problem of disparities in access to care. However, despite empirical evidence that demonstrates effectiveness of telepsychiatry, when compared to the care provided face-to-face, many psychiatrists are still not at ease with telepsychiatry. Including telepsychiatry in residency training curriculum can help increase the number of psychiatrists that will likely use it in caring for patients in rural and underserved communities. A recent review of use of telepsychiatry in graduate medical education concluded that there was a need for a more evidence-based approach to telepsychiatry training and that such a training, if done right, could not only improve clinical outcomes but also promote social accountability, cultural competence, and interprofessional care [3].

The body of literature that supports the assertion that utilizing telepsychiatry to provide mental health care has the potential to mitigate the workforce shortage that directly affects access to care, especially in remote and underserved areas, has been significant [4] and it continues to grow. Among the general application of telemedicine and telehealth, telepsychiatry has remained as one of the largest medical specialty uses for over a decade now [5, 6]. Telepsychiatry has been referred to by various terms including tele behavioral health, telemedicine, e-behavioral health, telemental health, e-care, telehealth, and telecare.

Health information technologies (HIT) continue to grow in numbers and many of them have the potential to enhance access to mental health care, as well as reduce disparities in use of services across groups in need. Such technologies are not limited to telepsychiatry and include use of Internet, smartphone programs or apps, and text messaging protocols. Utilizing such technologies can help solve the access problem and enable us to extend our clinical reach into underserved populations without significantly expanding our workforce [7].

In this paper we summarize benefits of using telepsychiatry, its clinical applications, relevant technology basics, and what competencies may be required for future psychiatrists with respect to telepsychiatry and technology. We review literature in the area of graduate medical education pertaining to telepsychiatry. We then discuss pedagogical approaches that will promote attainment of these competencies. Using an evidence-based approach, we conclude with proposing an elective that is likely to develop residents' competence to practice telepsychiatry.

Telepsychiatry- Technology Basics

While telepsychiatry has been defined in various ways, live interactive two-way audio-video communication, often referred to as videoconferencing, is the modality that has become synonymous with telemedicine broadly, and telepsychiatry specifically for mental health care. With videoconferencing, a provider at a distant location evaluates and treats a patient at their

local clinical site via live and interactive audiovisual conferencing systems over high-bandwidth networks. A typical telepsychiatry setup includes a video camera, microphone, speakers (or headset), and one or two displays at each end of the system. Often, separate displays or a picture-in-picture (if one display) are used to enable participants to see both outgoing and incoming video. A pan-zoom-tilt control of video camera is preferred which allows the clinical provider to remotely control his/her view of the patient's site or locally control the view that is being transmitted to the patient. A vital component of this interactive telepsychiatry unit is the coder/decoder (also referred to as codec), which provides the requisite compression and decompression, and synchronization of audio and video signals and it is required at both the patient and consultant ends of the system. A coder/decoder can be a separate device or it can be personal computer-based.

Regarding connectivity, historically telepsychiatry applications have used point-to-point network connections, usually as full or fractional T-1 or Integrated Services Digital Network (ISDN) circuits. With the rapid diffusion of Internet and Ethernet networks, Internet Protocol (IP) has largely replaced these older point-to-point networks. When using IP networks security must be ensured. This can be done by using encrypted codecs or by setting up a virtual private network (VPN) and/or a virtual local area network (VLAN). With the security measures in place, the advantage of IP networks is that they can be shared by multiple applications, e.g. Internet access, e-mail, LAN, etc. This means that the telecommunications or network costs can be shared, or considered a sunk cost.

Benefits of using Telepsychiatry

A growing body of literature suggests that use of telepsychiatry to provide mental health services has the potential to solve the workforce shortage problem that directly affects access to care, especially in remote and underserved areas [4, 8]. Telepsychiatry is not only effective and well accepted; it can also increase administrative efficiency while providing positive outcomes in most clinical settings [8].

Empirical evidence on the use and effectiveness of telepsychiatry services across the life span has been previously reviewed by our group [4] covering a time period of over half a century. In that review we noted that the evidence on effectiveness of telepsychiatry did not start to emerge until 2000 or later and was relatively weak. This literature began with descriptive articles that looked at acceptance, satisfaction, feasibility, and cost. There was then movement toward comparing telepsychiatry to services provided in-person. It hasn't been until more recent years that studies that provide the same treatment across the two modalities (telepsychiatry versus face-to-face) and measure clinical outcomes have emerged. However, in these studies the treatment tends to be very limited, usually medication management or a short course of CBT. Such studies show the outcomes to be generally similar as in treatment provided face-to-face and the acceptance of telepsychiatry to be generally good. Further, literature shows that if there are acceptance problems, it is usually the professional who is reluctant, not the patient or family. Usage is primarily in rural areas or jails, or with underserved subpopulations such as children. Our review also showed that while the state of the literature was generally not robust, there was more in psychiatry than other medical specialty areas, probably because of the greater reliance on the mental status examination and verbal communication as compared to a physical examination.

Hilty and colleagues also reviewed the published literature on effectiveness of telemental health compared to services provided face-to-face [9]. Their review suggested that telemental

health was not only effective for diagnosis and assessment across many populations and for disorders in many settings (for example emergency, home health), but it also appeared to be comparable to care provided face-to-face.

Deslich and colleagues have summarized the benefits and constraints of using telepsychiatry within the current system of healthcare [10]. On the benefits side, telepsychiatry can provide better access and higher-quality care to patients in need of such care with the potential cost savings to providers. On the challenges and barriers side, reimbursement, licensure, privacy, security, patient safety, and interoperability have all been identified.

In addition to the direct benefits of telepsychiatry to patients and providers, other benefits have also been identified, including:

1. Improving access to mental health services can help reduce geographic and socioeconomic health disparities
2. Reducing the time and expenses associated with travel can also improve consumer compliance
3. Improved education of mental health professionals
4. Improved coordination of care across mental health system
5. Improvement in recruiting and retaining mental health professionals to work in underserved or rural areas [11–14].
6. Potential of reduction of stigma associated with receiving mental health services [15].

Telepsychiatry Applications

Telepsychiatry can be used for diagnostic and therapeutic use across the age span. Common applications include diagnostic assessments; pre-hospitalization assessment and post-hospital follow-up care; medication management; psychotherapy; and consultation. Videoconferencing consultations can be used on routine as well as for crisis behavioral health cases using a "virtual" case management team. Points of delivery can include hospitals and their emergency departments, clinics, offices, homes, nursing homes, schools, and correction settings. Other uses of telepsychiatry include:

- Telehealth technologies can be used to restructure the implementation of training efforts, allowing the learning activity to originate from a variety of possible locations inside or outside the state. Designated trainers would not have to travel to multiple sites in order to deliver the desired training to multiple audiences. The provision of telehealth-facilitated training would also allow broader access to the training by the myriad of staff from varied institutions and minimize training related travel. Furthermore, telehealth-facilitated training can ensure that the subject matter is conveyed consistently from site to site, and questions and comments of the participants and their responses are communicated simultaneously to multiple audiences at the different training sites thus enriching the learning experience.
- The primary services needs of inpatients at most of the state mental health, developmental disabilities, and substance abuse facilities are usually met by facility staff. However, these patients often have co-morbidities or other health conditions that become manifest during their inpatient stay. It is often problematic, costly, and inefficient to provide other clinical services in a timely manner, either on site or by offsite transport. Many of such specialty consultation services are possible by telehealth/telemedicine.

- Many state institutions, such as correctional facilities or special needs schools, require mental health and other health services. Telepsychiatry/telehealth can be quite helpful in providing such services. This has been proven to be cost effective and educationally beneficial, as it has resulted in students remaining at the school and spending more time in the classroom, as they would have otherwise returned home.
- For the current system to work properly and efficiently there is a requirement for a seamless interface between the mental health professional, law enforcement and the judicial system. Commonly, law enforcement officials are responsible for the safety, care and sustenance of consumers in crisis, who often must be transported over great distances to facilities with receiving clinicians who have little or no information on the consumer en route. Other variables such as the changing mental status of the consumer, attitudes and cultural beliefs of the caregivers and drugs and/or alcohol consumed prior to the crisis further complicate the situation. Similar complications arise when law enforcement must interface with rural emergency departments when accompanying those recently apprehended or otherwise in custody that might have significant mental illness. Telepsychiatry and e-mental health systems could greatly improve the efficiency of these situations and improve public safety. Telehealth can also be used for commitment hearings, evaluation of competence, and forensic evaluations
- There is a great need to improve the quality of and access to mental health services in nursing homes and other extended care facilities. Residents' mental health conditions are often misdiagnosed (or underdiagnosed) and nursing staff are increasingly overburdened and inadequately trained to deal with mental health issues. Telepsychiatry and e-mental health services could improve the quality and efficiency of mental health services delivery. Furthermore, other clinical needs could be addressed by telehealth using the same infrastructure.
- The primary care physician is usually the principal gatekeeper for accessing the health care system. Many of the patients seen in the primary care setting have mental disorders, psychiatric co-morbidities, or psychogenic symptoms. Further confounding the problem are the primary care physician's limited mental health training and difficulty in referring patients for mental health services [16]. Therefore, primary care physicians often under diagnose mental health conditions, are unaware of developments in and protocols for pharmacotherapy, and struggle to appropriately refer their patients for external mental health services. There are several primary care applications for telepsychiatry and e-mental health, including training, tele-mentoring, teleconsultation, and care coordination.

Review of Literature on Training Residents in the Use of Telepsychiatry

Currently, training in telepsychiatry is not a requirement for psychiatry residency programs in the United States, the UK, Canada, Australia, or New Zealand. Training in rural mental health is only required in Australia and New Zealand where telepsychiatry is recommended when available, however. Canada is increasing training requirements in telepsychiatry specifically to meet the mental health needs of marginalized populations and those living in rural and remote areas [3]. In the United States, there appears to be a clear practice gap between resident/ fellow interest in telepsychiatry and the didactic curriculum and clinical experiences offered in residency programs.

A 2011 survey by Hoffman and Kane of 183 psychiatry residency programs in the United States found that very few programs offered a curriculum in telepsychiatry even though 72 % of the resident respondents were "interested" or "very interested" in telepsychiatry [17]. This was consistent with a similar response from residents in an earlier study by Glover and colleagues [18]. They surveyed 485 psychiatry residency and fellowship programs in the United States. More than two-thirds of the 283 respondents who completed the survey reported having an interest in telepsychiatry. Trainees viewed it as an important part of training although only 50 of the respondents reported having any clinical exposure to telepsychiatry. Over half of the respondents reported lack of any didactic teaching on telepsychiatry in their training programs. Not surprisingly, those who had some clinical exposure reported a higher interest level in telepsychiatry. Yet, the amount of exposure to pique interest was extremely modest with the majority of respondents reporting either a one-time encounter or less than 6 h of encounter time with several patients via telepsychiatry.

Unlike the Glover report, the Hoffman and Kane survey was sent to program directors and was limited by a low response rate of 25 %. Less than 50 % of responders stated residents in their program were involved in any telepsychiatry (either formal curriculum or informal clinical experience) and only 26 % reported having a formal curriculum in telepsychiatry. Like the Glover study however, those programs in rural areas were more likely to experience exposure to telepsychiatry. Of note, the vast majority of program directors reported an interest in receiving a sample curriculum in telepsychiatry.

Overall, it appears the majority of residents/ fellows as well as program directors in the United States are very interested in clinical telepsychiatry experiences and developing didactic curriculum despite the low percentages of programs currently doing this. Although the interest is apparent, the motivation for program directors to actually add telepsychiatry curriculum and clinical rotations or make any modifications to residency programs, is generally fueled by the Program Requirements outlined by the residency oversight organization, the Accreditation Council for Graduate Medical Education (ACGME). The current ACGME competencies for technology, in general, are very limited and focus mostly on the use of the electronic medical record (EMR). Competencies specifically for telemedicine/ telepsychiatry are not yet defined. There are no goals or objectives, nor any specific milestones to gauge a resident's level of competency in telepsychiatry knowledge or clinical abilities. There remains a great need for specific goals and objectives in curriculum development and also a method to assess the competency of trainees in the delivery of telepsychiatric services. This includes evaluating residents along a vast array of core competencies including clinical skills, technical knowledge, ethical understanding, forensic knowledge as well as inter-professional and communication skills.

Oesterheld and colleagues provide the details of a formal curriculum for training in telepsychiatry [19]. They identified necessary skills including technical skills, assessment skills and adaptation of skills to the telepsychiatry context. In a recent study by Sunderji and colleagues reviewing telepsychiatry in graduate medical education, only 20 peer-reviewed references which describe training psychiatry residents to deliver mental health care via real-time videoconferencing were identified. Of the 20 articles, none described a valid needs assessment of residents and only four defined learning objectives [3]. A needs assessment is, of course, necessary for the foundation of evidence-based curriculum development.

Crawford, Sunderji and colleagues completed a qualitative study to better assess the needs of resident learners in order to guide the development of telepsychiatry curriculum.

Their study focuses on the reflections of residents with an interest in telepsychiatry and experienced faculty members related to learning telepsychiatry at the University of Toronto. In addition to the basic skills identified years earlier by Oesterheld and colleagues, the curriculum developed by Crawford and colleagues included areas of practice such as collaborative and interprofessional skills, community psychiatry, cultural psychiatry, medico-legal aspects and systems-based practice skills [20]. These additions are better aligned with the competency framework of the ACGME in the United States. A comprehensive telepsychiatry clinical experience may include educating trainees in diagnostic assessment, consultation, psychopharmacologic management, and psychotherapy (individual, couple, or group) via video-conferencing. Specific considerations for demographic variations such as age (adult, child/adolescent), location/ settings (rural, urban, emergency department, nursing home, detention/ jail/ prison) and variation in language ability must also be considered.

Outside of the graduate medical education world, professional guidelines for telemedicine and telepsychiatry do exist. Recommendations that apply to all medical specialties include the AMA 2014 Practice Parameters for Telemedicine [21]. The report provides a summary of AMA's existing policies with respect to payment, clinical standards, licensure, and ethical guidance. The American Psychiatric Association (APA) Council on Psychiatry & Law published a resource document to discuss the role of internet in the practice of psychiatry, particularly when communicating with patients and the public [22]. While the document provides discussion to frequent questions asked regarding e-therapy, medical practice websites and e-mail, it did not have the intention of addressing detailed aspects of telepsychiatry delivery. The American Telemedicine Association developed practice guidelines on videoconferencing-based telemental health in October 2009 [23]. This was a consensus-based best-practice reference written as a summary of clinical experiences of experts in the practice of telepsychiatry.

Additionally, in 2013, the American Telemedicine Association developed practice guidelines for behavioral health professionals [24]. Practice parameters for telepsychiatry services for child and adolescent psychiatry were developed by the Work Group on Quality Issues, American Academy of Child and Adolescent Psychiatry [25]. Likewise, in 2013, the Telepsychology Task Force (TTF) put forward guidelines for telepsychology, which was then established by the American Psychological Association (APA), the Association of State and Provincial Psychology boards and the APA Insurance Trust [26]. The intention of the guidelines is to ensure that psychologists adhere to a certain standard when delivering their care through telepsychology. It was understood by the TTF that while telepsychology offers opportunities, this form of communication might also have its periods of difficulties. Attention must be paid to the key aspects of what makes telepsychology different from traditional provider to client/patient in-person care delivery.

Suggested Guidelines for Graduation from Residency Training

Residency programs must take reasonable steps to ensure residents demonstrate competence with the telepsychiatry practice and express understanding of the potential impact of telepsychiatry services on patients or other healthcare professionals.

Based on our review of the literature, as summarized above, we suggest the following guidelines for GME:

Guideline 1: Residents must demonstrate ethical and professional standards of care are met throughout the duration of the telepsychiatry services provided.
Guideline 2: Residents must ensure the identification, location and contact information of patient and provide own identification before the service proceeds.
Guideline 3: Resident must be aware of local emergency resources such as location of nearest hospital or emergency room capable of managing psychiatric emergencies in the location of the patient.
Guideline 4: Residents must be aware of other local professionals, institutions, agencies or demonstrate ability to coordinate such care with a team member in case a local referral is needed
Guideline 5: Residents must discuss contact methods and management of patient concerns in between appointments, how to handle emergencies, etc.
Guideline 6: Residents must demonstrate understanding of the applicable laws of where patient is located and regulations, as well as organizational requirements that govern informed consent, involuntary commitment, controlled substances and Tarasoff laws in telepsychiatry care delivery as well as relevant laws and regulations when providing telepsychiatry services to patients across jurisdictional and international borders.
Guideline 7: Residents must obtain and document informed consent and release of information processes that specifically addresses the unique concerns related to the telepsychiatry services provided and inform patients of the potentially increased risks to loss of confidentiality inherent in the use of the telecommunication technologies, if any.
Guideline 8: Residents must take reasonable steps to ensure that security measures are in place to protect private health data and information from unintended access or disclosure and maintain the confidentiality of the data and information.
Guideline 9: Residents should be competent with the culture of the population they are serving, which may or may not be similar to the resident's surrounding environment.
Guideline 10: Residents must be able to identify the time at which telepsychiatry services are no longer appropriate, and must be discontinued.
Guideline 11: Residents must consider the unique issues that may arise with test instruments and assessment approaches designed for in-person implementation when providing telepsychiatry services.
Guideline 12: Resident must document appropriately in the EMR (HER) and have a basic understanding of billing and payment for various telepsychiatry services.

A Proposed Elective

Due to the ever-increasing importance of teletechnology in the field of psychiatry, new graduates are more than ever expected to be familiar with or at least be comfortable using these cutting edge tools in providing care to patients. In our current system, residency training typically lags behind commercial demand for skills. Therefore, due to the relative scarce use of telepsychiatry in residency training, no current standardized training protocols exist to guide training programs in preparing residents for future jobs in telepsychiatry. As a consequence of the limited training that graduates are receiving at this point, most commercial telepsychiatry providers have taken on the

burden of training psychiatrists themselves. Most current telepsychiatry job postings state that "telepsychiatry experience" is beneficial but if not, any and all training necessary will be provided. Due to the rapid growth of the field and as telepsychiatry becomes more commonplace, eventually the burden of training will move away from the service sector to the training programs. Residents who do not receive training in telepsychiatry will be less competitive for these positions than those who do and consequently programs that do not offer any telepsychiatry experience may be seen as inferior by potential applicants.

Standardization of telepsychiatry education, at this point, will be difficult due to the limited prevalence of telepsychiatry programs in certain areas as well as the diverse patient population that is used to treat and evaluate. The most common current use of telepsychiatry is in the outpatient clinic, either through a consult system or primary provider system. However, telepsychiatry is continuing to expand into evaluating patients in emergency departments, consultation and liaison services, and even to conduct research. Telepsychiatry can also be used to treat patients across the life span. Each one of these uses of telepsychiatry comes with its own sets of unique challenges and risks, therefore training in each category would be ideal but most likely not feasible in the current market. It may be advisable to start the telepsychiatry training on an "elective" basis to allow interested residents to gain experience in a varying number of settings. Electives should be reserved for advanced placement residents as the elective should be more focused on learning the challenges and unique aspects of using technology to see patients rather than building interviewing skills or enhancing psychopharmacology knowledge. If possible, residents should be given the opportunity to rotate and see patients in the varying settings and at minimum in outpatient clinics and emergency departments, as these are the most predominant locations for telepsychiatry. Resident responsibility should start with shadowing current providers until residents can gain familiarity and comfort with the technology. Shadowing should progress towards more "hands on" patient care but with continued supervision from primary providers to assist with any technical difficulties that may arise. Complete independence with the patient interaction can be assigned, however should be limited as the primary objective of the elective should be, as previously stated, to gain knowledge and understanding of the telepsychiatry system itself and not to teach basic interviewing skill or pharmacology knowledge.

A collection of reading materials should be incorporated into the elective and time should be reserved to allow residents to review these materials. Readings should encompass medicolegal issues, ethical concerns, logistics, challenges unique to telepsychiatry and guidelines on industry standards. Materials should also be included to help residents become familiar with the current equipment that is available, the videoconferencing industry that provides products (e.g. Polycom, Cisco, Tanberg, Lifesize, Cloudvisit, etc.), and the current evidence base for telepsychiatry. Residents should also review on-line training modules that are provided by Northern Arizona Regional Behavioral Health Authority (NARBHA), a telemedicine network serving rural areas of Northern Arizona since 1996. The modules are available at the following link: http://www.rbha.net/TelepsychiatryBasics.html. It provides an on-line telepsychiatry basics seminar which is designed to help clinicians, administrators, and technical staff who are about to start, or who need information about starting and/or overseeing, a telemental health program. The training is divided into a clinical track and an administrative track. Topics offered in the clinical track include an overview of telemental health, best practices, psychodynamics, and use of interpretive services via videoconferencing. Residents should also be

encouraged to join the American Telemedicine Association as "student members", and if available familiarize themselves with the use of the InTouch videoconferencing robot.

An elective would include exposure to telepsychiatry in various clinical settings including emergency department, other acute crisis facilities, consult-liaison service, and outpatient clinics. Such an elective would also include didactics, opportunity for readings and familiarization with telepsych equipment, industry, research, etc. Table below provides a listing of some of the available resources for such an elective.

Association	Title of Guideline	Year	Topics
American Psychological Associations	Guidelines for Telepsychology http://www.apa.org/practice/guidelines/telepsychology.aspx	2013	Discusses differences between classical providers and telehealth providers; Provides 8 guidelines for telepsychologists.
American Psychiatric Association	Resource Document on Telepsychiatry and Related Technologies in Clinical Psychiatry https://www.psychiatry.org/psychiatrists/search-directories-databases/library-and-archive/resource-documents	2014	Discusses the role of internet in the practice of psychiatry; discusses frequently asked questions regarding e-therapy, medical practice websites and email; medico-legal issues and pitfall/common mistakes of telepsychiatry.
American Academy of Child and Adolescent Psychiatry	Practice Parameter for Telepsychiatry with Children and Adolescents http://www.jaacap.com/article/S0890-8567(08)60154-9/fulltext	2008	Discusses telepsychiatry with particular focus on C&A psychiatry: history, development, model of delivery, infrastructure, legal issues, management strategies, equipment, optimizing care, informed consent, location considerations, etiquette, and prescribing medications
American Telemedicine Association	Practice Guidelines for Video-Based Online Mental Health Services http://www.americantelemed.org/resources/telemedicine-practice-guidelines/telemedicine-practice-guidelines/practice-guidelines-for-video-based-online-mental-health-services#V5-LIusrJdg	2013	Generic guidelines covering basics of patient encounters in telepsychiatry such as identity verification, location verification, expectation setting, emergency protocols, medication and cultural competence, technology considerations
American Telemedicine Association	Practice Guidelines for VideoConferencing-Based TeleMental Health http://www.americantelemed.org/docs/default-source/standards/practice-guidelines-for-videoconferencing-based-telemental-health.pdf?sfvrsn=6	2009	Creates guidelines for online mental health: initiation, patient appropriateness, informed consent, physical environment, communication and coordination, emergency management, medical issues, technology guidelines, administrative guidelines

Title of Textbook	Editor(s)/ Author(s)	Year	Topics
Telemental Health	Kathleen Myers, Carolyn Turvey	2013	Discusses the clinical, technical, and administrative foundations for the evidence-based practice of telepsychiatry.
Telepsychiatry & Telemental Health, An Issue of Child & Adol Psych Clinics of N. Am	Brian Grady, Eve-lynn Nelson	2011	Emphasizes use of telepsychiatry and telemental health to children and adolescents in various settings and with a variety of clinical approaches
Telepsychiatry and E-mental health	Amanda Oakley, Paul McLaren, Peter Yellowlees	2009	A comprehensive overview in the ways telemedicine can aid diagnosis and management. It includes experts' personal experiences

Conclusions

The potential for telepsychiatry to improve access to adequate mental health care is becoming more evident. While its continued advances are in progress, the current technology appears to be adequate for most clinical uses. There are numerous applications of telepsychiatry that are already defined and more are ripe for exploration. Barriers to implementation are primarily of the human variety and will require a combination of consumer, provider and governmental advocacy to overcome. Telepsychiatry can be effectively used to bridge mental health providers with the population that may not have access to such services due to various reasons. Aside from helping solve the access problem, use of telepsychiatry can also help with narrowing the gap between science and practice by system-level implementation of measurement-based, standardized, and evidence-based practices. The use of technology has brought down the costs of electronically delivered care besides making the communication easy and accessible. The advancement in technology over the years, has connected the majority of the American population and the Internet has had significant effect of increasing users' social networking.

The benefits of training residents in telepsychiatry include well-established and immediate results as well as probable, and yet, unseen positive impacts. Obtaining competency in telepsychiatry will better prepare residents for the job market of the future. For example, The Veterans Health Administration (VHA) has embraced telepsychiatry and plans to continue expansion of these services over the next several years. With the increasing demand for psychiatric services for increasingly diverse and mobile populations, it is in our best interest to train residents to provide this care without the limitations of geographic proximity. In fact, it has been speculated that telepsychiatry practice for marginalized and underserved populations during residency can promote a sense of responsibility for and interest in providing this type of care post-residency. Telepsychiatry also interfaces well with integrated care and the patient-centered focus of the medical home model which is the model of care for the future. Developing psychiatric leaders for the future who are knowledgeable and comfortable with technology within an integrated practice model will add stability to and protect the practice of psychiatry in the future.

In summary, in order for telepsychiatry to reach its full potential in meeting the demands for mental health care in the United States, we will have to develop as well as improve upon graduate medical education curriculum and training. Telepsychiatry education and training will need to be integrated with and complementary to the existing requirements of post graduate medical education as outlined by the ACGME. Some requirements may require significant revision which can be an arduous process. We must begin with evidence-based didactic curriculum and teaching methods which can be used by a variety of residency programs. This framework must also allow for innovation within individual programs. Lastly, curricula must be accurately evaluated and continuously improved upon in order to understand the best methods to ensure resident competency in the practice of telepsychiatry.

Compliance with Ethical Standards This article does not contain any studies with human participants or animals performed by any of the authors.

Conflict of Interest The authors declare that they have no conflict of interest.

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